

cured membrane was observed to determine whether it was peeled by a cellophane adhesive tape to get a trouble or not.

○: no trouble

×: a peeling trouble

(3) Flexibility:

The test substrate was assayed to determine whether it was folded at a bend angle of 180° to get a crevice or not.

○: no crevice

△: a little crevice

×: a crevice with the cured membrane peeled along the fold line

(4) Heat-deterioration resistance:

The test substrate was left at 125°C for 5 days, and assayed to determine whether it was folded at a bend angle of 180° to get a crevice or not.

○: no crevice

△: a little crevice

×: a crevice with the cured membrane peeled along the fold line

(5) Nonelectrolytic gold-plating resistance:

A gold plating as described below was applied to the test substrate. The gold plating was observed to determine whether it was peeled by a cellophane adhesive tape to get a trouble or not.

○: no trouble

△: a little peeling trouble

×: no peeling trouble

Nonelectrolytic gold-plating;

The test substrate was dipped in an acidic defatting solution (the aqueous 20 vol% MetexL-5B solution made by Nihon MacDermid KK) of 30°C for 3 minutes to defat, and was then dipped in a stream of water for 3 minutes to wash. The test substrate was dipped in an aqueous 14.3 wt% ammonium peroxodisulfate solution at a room temperature for 3 minutes to soft etch, and was then dipped in a stream of water for 3 minutes to wash. The test substrate was dipped in an aqueous 10vol% sulfuric acid solution at a room temperature for 1 minute, and was then dipped in a stream of water for 30 seconds - 1 minute to wash. The test substrate was dipped in a catalyst solution (an aqueous 10 vol% metal plate-activator350 solution made by Meltex KK) of 30°C for 7 minutes to furnish the substrate with the catalyst, and was then dipped in a stream of water for 3 minutes to wash. The test substrate furnished with the catalyst was dipped in a nickel plating solution (an aqueous 20 vol%; pH 4.6) of 85°C for 20 minutes to complete an nonelectrolytic nickel-plating. The test substrate was dipped in an aqueous 10 vol% sulfuric acid solution at a room temperature for 1 minute, and was then dipped in a stream of water for 30 seconds - 1 minute to wash.

Then, the test substrate was dipped in a gold plating solution (an aqueous 15 vol% auroelectroless UP and 3 vol% potassium gold cyanide solution made by Meltex KK; pH 6) of 95°C for 10 minutes to complete an nonelectrolytic gold-plating. The test substrate was then dipped in a stream of water for 3 minutes to wash and was dipped in 60°C hot water for 3 minutes to wash. The test substrate was washed sufficiently, drained, and dried to prepare the nonelectrolytic gold-plated test substrate.

Table 4 - 1

	Example			
	5	6	7	8
Component (X)	XA-1	XA-1	XA-1	XA-1
Component (H)	H-1	H-2	H-3	H-4
Development	○	○	○	○
Soldering-heat resistance	○	○	○	○
Flexibility	○	○	○	○
Heat-deterioration resistance	○	○	○	○
Nonelectrolytic gold-plating resistance	○	○	○	○